UCRL-JC-126215 Abs

Fabrication Process for the PEP-II RF Cavities*

R.M. Franks, *Lawrence Livermore National Laboratory*, R.A. Rimmer, *Lawrence Berkeley National Laboratory*, H. Schwarz, *Stanford Linear Accelerator Center*

This paper presents the sixteen major steps used in the fabrication of the 26 RF Cavities required for the PEP-II B-factory. Several unique applications of conventional processes have been developed and successfully implemented: electron beam welding, with minimal porosity, of thick (2 cm) copper cross-sections; extensive 5-axis milling of water channels; electroplating of 1 cm thick OFE copper; tuning of the cavity by profiling beam noses prior to final joining with the cavity body; and machining of the cavity interior are described. Technical details and visual aids are used to define and clarify the entire production process.

* This work was performed under the auspices of the US Department of Energy by the Lawrence Livermore National Laboratory under Contract W-7405-Eng-48.